

THE MINERAL INDUSTRY OF

PERU

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With a population of more than 27 million, Peru had a gross domestic product (GDP) of \$52 billion,¹ or \$116 billion in terms of purchasing power parity in 1999 (Ministerio de Energía y Minas, 1999a, p. 1; U.S. Central Intelligence Agency, 2000). The GDP grew by 3.8%, which was considerably higher than 0.7% in 1998, and the average inflation rate for the year was 3.7%, which was lower than 6.0% in 1998. Minerals and hydrocarbon industries were 11.8% of Peru's 1999 GDP. Mining export revenues represented 49.2% of total exports of \$6.1 billion, the trade deficit was about \$0.6 billion. In spite of the effects of El Niño, the Asian financial crisis, the instability in the Brazilian markets of Rio de Janeiro and São Paulo, and the lower prices for its major mineral exports (mainly copper, gold, lead, and zinc), the Peruvian economy was still growing. Peru's foreign debt amounted to \$28.6 billion, and the net international reserves were \$7.7 billion by yearend 1999 (Ministerio de Energía y Minas, 1999a, p. 14). Peru's public debt as a percentage of the GDP decreased to 28% in 1998 from 54% in 1993 (Ministerio de Energía y Minas, 1999a, p. 5-7; Sociedad Nacional de Minería, Petróleo y Energía, 2000, p. 20).

The privatization of state-owned firms and formation of joint ventures in the mining industry continued and foreign investors viewed Peru as an attractive open-market economy in Latin America (Campbell, 1999; Comisión Nacional de Inversiones y Tecnologías Extranjeras, 2000, p. 1).

In 1999, according to the Comisión Nacional de Inversiones y Tecnologías Extranjeras (CONITE) and the Unit on Investment and Corporate Strategies Office of the United Nations' Economic Commission for Latin America and the Caribbean, Peru received \$9.03 billion of foreign direct investment (FDI) compared with \$8.03 billion in 1998 and \$7.28 billion in 1997 (Economic Commission for Latin America and the Caribbean, September 6, 2000, Net FDI inflows, by country and subregion, 1995-1999, accessed September 6, 2000, via URL <http://www.eclac.cl>; CONITE, October 20, 2000, Inversión extranjera registrada segun sector de destino, 1992-1999, accessed October 20, 2000, via URL http://www.mef.gob.pe/peruinv/esp/varias/cifras_s.htm). CONITE also reported that Peru received \$1.76 billion of FDI in the minerals sector [mining (\$1.67 billion) and petroleum (\$98 million)] compared with \$1.51 billion in 1998 and \$1.33 billion in 1997 (CONITE, October 20, 2000, Inversión extranjera registrada segun sector de destino, 1992-1999, accessed October 20, 2000, via URL http://www.mef.gob.pe/peruinv/esp/varias/cifras_s.htm).

The Government also slashed subsidies and tariffs, freed foreign exchange and interest rates, liberalized international investment rules, simplified the tax code, established

concessions for construction and operation of public infrastructure (roads, ports, and airports), and embarked on fiscal austerity and investment in social development and agriculture (Ministerio de Energía y Minas, 1999c, p. 3, 6).

The Asian Pacific Economic Council's (APEC) 18 members, which included Peru, had a GDP of \$13 trillion, which represented 56% of world income and 46% of global trade in 1999. APEC was expected to provide increased opportunities to Peru to expand and diversify its international trade (Ministerio de Energía y Minas, 1999c, p. 8).

CONITE reported that since 1993, Peru has received \$15.7 billion of direct foreign investments and \$12.4 billion of committed new foreign investments. Of that total mining would receive 51%; petroleum, 34%; and the other sectors of the economy, 15% (Ministerio de Energía y Minas, 1999c, p. 9; Sociedad Nacional de Minería, Petróleo y Energía, 2000, p. 20; CONITE, December 1999, Inversión extranjera en el Peru, accessed October 20, 2000, via URL <http://www.mef.gob.pe/peruinv/ingles/boletin/pag1.htm>).

Since July 19, 1991, when privatization program began, the Peruvian Government has privatized more than 200 state-owned corporations and netted \$9 billion; new investments of \$7 billion have been committed. Privatization revenues amounted to \$300 million in 1999. As of December 31, revenues of the mining sector amounted to \$1.7 billion, with projected investments of \$4.5 billion (Ministerio de Energía y Minas, 1999c, p. 48). The privatization process continued to be managed by the Comisión para Promoción de Inversión Privada, which had the legal authority to transfer state-owned assets. Responsibility for specific privatization was vested in Comités de Privatización (CEPRI's) whose members were selected from the ranks of leading professionals and officials, mainly from the private sector. In 1999, there were more than 30 CEPRI's in more than 50 privatization projects. In the mining sector, the following large projects were to be privatized: copper deposits of Michiquillay in the Department of Cajamarca, Tambo Grande and Las Bambas in the Department of Cusco, and Toromocho in the Department of Junín; polymetallic ore deposits of the state-owned Minero Perú S.A. in the whole country and Empresa Minera del Centro del Perú S.A. (Centromín) in the Department of Cerro de Pasco; San Antonio de Poto gold deposit in the Department of Puno; coal deposits at Alto Chicama in the Department of La Libertad; and the phosphates of Bayóvar in the Department of Piura (Ministerio de Energía y Minas, 1999c, p. 47, 51; CONITE, December 1999, Inversión extranjera en el Peru, accessed October 20, 2000, via URL <http://www.mef.gob.pe/peruinv/ingles/boletin/pag8.htm>).

The new hydrocarbon law (No. 26844 of 1997) eliminates exclusive rights of the state-owned Petróleos del Perú S.A.

¹Where necessary, values have been converted from Peruvian new soles (S/.) to U.S. dollars at the rate of S/3.476=US\$1.00.

(Petroperu) in the industry, such as control over secondary recovery of crude oil, refining, and imports and subsequent resale of petroleum and byproducts. The law has ensured more favorable oil and gas exploration and production contract terms for investors, which has resulted in an increased number of domestic and foreign companies expressing interest in participating in exploration, production, and distribution of natural gas and oil contracts with Petroperu (Sociedad Nacional de Minería, Petróleo y Energía, 1999, p. 101-102) (table 2).

Supreme Decree No. 014-92-EM, the single revised text of the General Mining Law of June 2, 1992, provides guaranteed protections to mining ventures and contracts under the Peruvian Civil Code. Consequently, such ventures and contracts are immune from unilateral changes by any governmental authority in Peru without an appropriate legal or administrative remedy. Also, the Peruvian Constitution establishes equal protection for domestic and foreign investors who may enter into agreements with the Government. It also guarantees free access, possession, and disposal of foreign currency. Within the framework of the promotion of investment (Decree Law No. 708), Legislative Decrees No. 662 and 757, Foreign Investment Promotion Law and Framework Law for the Private Investment Growth, respectively, and protection legislation, more than 250 domestic "Stability and Guarantee Contracts" have been signed since 1993 (Ministerio de Energía y Minas, 1999c, p. 9; CONITE, October 20, 2000, Inversion extranjera según sector de destino, accessed October 20, 2000, via URL http://www.mef.gob.pe/peruinv/esp/varias/cifras_s.htm; CONITE, October 20, 2000, Supreme Decree No. 162-92-F, Perú—Legal Framework, accessed October 20, 2000, via URL <http://www.mef.gob.pe/peruinv/ingles/legal/ds162.htm>).

Legal procedures to obtain mining rights were made easier by the enactment of complementary legislation, Supreme Decree No. 018 of July 9, 1992. The Government no longer has exclusive control over exploration, mining, smelting, and refining of metals and fuel minerals. Individuals and private companies are allowed to hold mining permits in Peru. In the legal framework for investment and taxation, no distinction is made among domestic and foreign investors, corporations, and consortia formed in Peru or abroad. No restrictions are put on the remittance of dividends, depreciation, and royalties abroad. Contracts can be signed among investors, and the Government guarantees the stability of legal commitments and taxes. Peru is a signatory of the Multilateral Investment Guarantee Agency (MIGA), the international MIGA agreement, and many bilateral agreements, such as the Overseas Private Investment Corporation, with 25 countries (Ministerio de Energía y Minas, 1999c, p. 9).

Petroperu managed energy-related activities for the Government. In principle, all mineral resources, including geothermal resources, belonged to the State. The State granted concessions for use by the Government, private companies, and individuals. The administration and management of all mining legal processes and concessions rested in the executive branch.

The Dirección General de Asuntos Ambientales (DGAA) of the Ministerio de Energía y Minas (MEM) has the responsibility to address environmental problems that result from energy and mining activities and is mandated to implement the current (1999) environmental code and regulations. The sustainable

development model for the mining and energy sectors began in 1993 with the setting of regulations and procedures for the gradual reduction of pollution. The model considers environmental protection and economic development policies. The mining industry must comply by adjusting its ongoing operations to permissible effluent levels and its new operations by using cleaner technologies. The DGAA evaluates and proposes the environmental regulations for the mining and energy sectors, including the maximum emission levels that are compatible with the internationally accepted limits set by the United Nations and the World Bank; evaluates and processes the approval of Environmental Impact Assessments (EIA's) for new operations and the Environmental Adjustment and Management Programs (PAMA's) for ongoing operations; administers the national environmental information system; and is responsible for the EIA's and PAMA's in the hydrocarbon and electricity sectors (Ministerio de Energía y Minas, 1999c, p. 67). The mining and oil companies are increasing their efforts to protect the environment, and oil companies, in particular, are under pressure because the number of operations in the Amazon Rain Forest, one of the world's most sensitive ecosystems, are increasing (Ministerio de Energía y Minas, 1999c, p. 68).

On January 21, 2000, the Peruvian Government announced that it was postponing the bidding on the midstream segment of the Camisea natural gas project in the Department of Cusco until March 6; this was the fourth delay since the original tender date of September 29, 1999. The Government said this postponement, which was requested by several potential bidders, was necessary to allow the companies to factor the recently signed take-or-pay contract for Camisea by Electroperu S.A. into their bids (U.S. Embassy, Lima, Peru, February 3, 2000, Government of Peru postpones Camisea bidding, accessed February 3, 2000, at U.S. State Department Internet 0475/010251741/gd-ipbsu@state.gov). Royal Dutch-Shell Group and Mobil Oil Corp. decided not to go forward with development of the Camisea gasfield, which contained 368 billion cubic meters (Gm^3) (13 trillion cubic feet of natural gas) (Ortigas, 2000, p. 10). Peru's Special Privatization Committee (CECAM) for the Camisea Project was planning to make presentations to the representatives of oil and gas multinationals in key locations in the Americas and Europe. CECAM officials will brief the representatives on the Government's plans for development of the Camisea natural gas field and discuss their implementation (Ortigas, 2000).

In 1999, Peruvian metals and minerals production was valued at \$3.6 billion, value of all mining products exported during the year amounted to \$3 billion, 10% more than in 1998 (table 1). Including petroleum, Peru's mineral export earnings amounted to \$3.2 billion or 52.5% of its total exports of \$6.1 billion. Imports decreased by 18% to \$6.7 billion, which generated a deficit of \$600 million in the country's trade balance. Peru imported crude oil valued at \$591.2 million, which created a trade deficit of \$352.6 million for the energy sector in 1999 (Ministerio de Energía y Minas, 2000, p. 16; Sociedad Nacional de Minería, Petróleo y Energía, 2000, p. 70; Soldi, 2000, p. 1-2).

Despite Latin America's economic turmoil, Peru's 1999 metal production increased compared with that of 1998, particularly, in gold (36%), zinc (12.8%), silver (12.7%), copper (5%), and

lead (2.5%). In gold, the increased output was because of the significant production achieved by large (79.4%) and medium (17.5%) mining corporations. Minera Yanacocha S.A. contributed with 56.3% of gold production. The copper increase was the result of expansions at BHP Tintaya S.A.'s Tintaya Mine, Sociedad Minera Cerro Verde S.A.'s Cerro Verde Mine, and Southern Peru Copper Corp.'s (SPCC) Cuajone Mine plus solvent extraction and electrowinning (SX-EW) of oxide ores in the Cuajone and the Toquepala copper mines. Cía. Minera Atacocha, Cía. Minera Condestable, and several medium-sized mines contributed to offset the output loss of closed small-sized mines in central Peru (Ministerio de Energía y Minas, 1999b, p. 21).

In 1999, mining was the main exporting sector of the country. Gold, copper, zinc, lead, and silver ranked first, second, third, fourth, and fifth, respectively, among its main mineral exports (Ministerio de Energía y Minas, 2000, p. 24). As a member of the Andean Common Market [ANCOM (Bolivia, Colombia, Ecuador, Peru, and Venezuela)], Peru sold about 6% of its exports to the other ANCOM members; about 4% was sold to other countries in Latin America. Peruvian mineral exports could increase as the negotiations between the Common Market of the Southern Cone (Argentina, Brazil, Paraguay, and Uruguay and associate members Bolivia and Chile) and ANCOM lead to a free-trade pact by 2001 and perhaps create the South American Free Trade Agreement. Peru, however, has been cautious about turning bilateral agreements into a single agreement (Hall, 1998; Ministerio de Energía y Minas, 1999c, p. 21; CONITE, October 20, 2000, Your best investment option, accessed October 20, 2000, at URL <http://www.mef.gob.pe/peruinv/ingles/legal/peru.htm>).

Two major mineral developments took place in Peru in 1999. In the first, revised proven and probable ore reserves at the Antamina copper-zinc megaproject were calculated to be 559 Mt grading 1.24% copper, 1.03% zinc, 13.71 grams per metric ton silver, and 0.029% molybdenum. The Canadian owners Noranda Inc., Rio Algon Limited, and Teck Corporation included drilling data gathered during the construction phase of the project. Antamina will be mined by open pit, and full production was expected by yearend 2001. It will require \$1.5 billion for its construction phase, with a total capital requirement of \$2.2 billion (Metal Bulletin, 2000a). In the second, Cambior Inc. of Canada was negotiating an agreement with the Peruvian Government to transfer the rights for La Granja copper project, which will expire in 2003. Cambior has opened a data room at La Granja for bidders to visit. Minero Perú will offer 100% of the project in an auction by the first quarter of 2001. The auction will be a buyout of the royalty to be paid when La Granja comes into operation. La Granja will require a total of \$2.35 billion for its development (Ministerio de Energía y Minas, 1999c, p. 30; Metal Bulletin, 2000b).

In 1999, several joint-venture agreements and acquisitions were signed in Peru. For example, Cominco Ltd.'s Cominco Perú SRL and Solitario Resources Corp. of Canada entered into a joint venture to develop the Bongará zinc project in the Amazonas Department; if needed, Cominco will provide financing for the project to earn up to 65% interest. Crown Resources Corp. of the United States and Placer Dome Inc. of Canada formed a joint venture to develop the Yanacocha gold

project, which is north of the gold operations of Minera Yanacocha S.A. [Newmont Mining Corp. of the United States (51.35%), Cía. de Minas Buenaventura S.A. of Peru (43.65%), and World Bank's International Finance Corporation, (5%)] in the Department of Cajamarca; Placer can earn a 60% interest. Crown and Billiton Group of the Netherlands signed a joint-venture agreement to explore the Soloco zinc project, which is south of the Bongará zinc project; Billiton can earn a 60% interest in Soloco. On July 19, Doe Run Resources Corp. of the United States acquired Empresa Minera Cobriza, which was a state-owned firm in Huancavelica Department, for \$7.5 million and a committed investment of \$12 million (Ministerio de Energía y Minas, 1999c, p. 48-51).

Several mines and plants, in order of importance, were expanded. Minera Yanacocha brought its gold mines, Yanacochas (Norte, Oeste, and Sur), Encajón, and Plateros, into operation and expanded La Quinua, Cerro Negro, and Cerro Quilish gold properties, which augmented gold output to 51.5 metric tons (t) from 41.4 t in 1998. Cyprus-Amex Minerals Co., Cerro Verde's operator, decided to develop the Cerro Negro copper project by 2000, which has 70 million metric tons (Mt) of ore reserves grading 0.532% of copper, at a cost of about \$100 million; Cerro Negro will provide an additional 20,000 metric tons per year (t/yr) of copper, which will increase Cerro Verde's copper metal output to about 120,000 t/yr in 2000. Refinería Cajamarquilla S.A. (RCSA) (Cominco Ltd. of Canada, 87% and Marubeni Corp. of Japan, 13%) expanded its Cajamarquilla zinc refinery to 120,000 t/yr from 100,000 t/yr in 1996 at a cost of \$30 million. A 120,000-t/yr zinc refinery will be built by RCSA at a cost of \$326 million, which will increase RCSA's zinc metal production to 240,000 t/yr in 2002. The Sipán gold mine of Cía. Minera Sipán S.A. of Peru entered into operation and produced 6.6 t of gold with an investment of \$36 million (Ministerio de Energía y Minas, 1999c, p. 48-51; CONITE, October 20, 2000, Perú—Your best investment option, accessed October 20, 2000, via URL <http://www.mef.gob.pe/peruinv/ingles/boletin/pag8.htm>).

According to SPCC, its Ilo smelter and refinery operations in Moquegua Department will be modernized and expanded to treat 1.7 million metric tons per year (Mt/yr) of copper concentrate from 1.1 Mt/yr in 1999. The expansion should be completed in 2004 at an estimated cost of \$650 million. Expansion of the Toquepala Mine and concentrator in Tacna Department was expected to begin in 2001. The feasibility studies for the construction of an additional leaching section at the Cuajone SX-EW in Moquegua Department continued, which would be expanded to 22,000 t/yr of copper metal by mid-2003. The Ilo refinery will process the concentrates produced by the Cuajone and the Toquepala copper mines, which contain 1.73 billion metric tons of minable reserves and 665 Mt of leachable ("lixivable") reserves (Smith, 1999; Metal Bulletin, 2000c).

In 1999, other copper and gold feasibility studies and project constructions took place, in order of importance, in the northern copper belt (Antamina, La Granja, Michiquillay), the southeastern copper belt (Tintaya, Ferrobamba), the central polymetallic belt (Yauricocha, Toromocho, Cerro de Pasco), and the gold belt (Quicay, Ocoña). Centromin Peru transferred its Paragsha zinc mine (formerly Cerro de Pasco) to Cía. Minera

Volcán S.A., which was an aggressive Peruvian mining company that became the largest zinc producer in the country after this acquisition (Soldi, 2000, p. 1-2). Private firms, mostly controlled by local interests, dominated the medium- and small-sized mining operations, and more than 80 foreign mining companies have been established in Peru since 1990. This private sector produced 95% of the minerals consumed by local and international markets as opposed to 55% 8 years ago (Ministerio de Energía y Minas, 1999c, p. 13). Between 2000 and 2007, the private sector had planned to invest more than \$12 billion in several mining projects in the construction and expansion stages, exploration prospects, projects in the feasibility stage, and the privatization process (Ministerio de Energía y Minas, 1999c, p. 29; CONITE, October 20, 2000, Perú—Your best investment option, accessed October 20, 2000, at URL <http://www.mef.gob.pe/peruinv/ingles/boletin/pag8.htm>).

Peru's copper content of mine output increased to 536,387 t from 483,338 t in 1998. About 521,100 t of copper was exported with a value of \$776.3 million (Ministerio de Energía y Minas, 2000, p. 24; Soldi, 2000, p. 2).

SPCC remained the largest copper producer in the country with an output of 338,200 t of copper from its mine operations at, in order of importance, the Toquepala and the Cuajone open pits and 47,720 t of copper recovered from the SX-EW plant at Toquepala. SPCC's Ilo refinery's output was a record high of 233,038 t of copper and 4,268 t of molybdenum with 114.4 t of silver. BHP, Peru's second largest copper producer, reported an output of 76,795 t of copper from its Tintaya open pit in Cusco. Cyprus-Ammax's Cerro Verde copper mine in Arequipa produced 67,889 t. This represented Cerro Verde's fourth consecutive increase in output following the completion of its mine expansion and mill recovery improvement programs. Doe Run Peru produced 23,627 t of copper from its base metal mines. (Ministerio de Energía y Minas, 1999a, p. 49).

In 1999, Peru's gold production amounted to 128.5 t; the country exported 131.5 t of gold valued at about \$1.2 billion (Ministerio de Energía y Minas, 2000, p. 24; Soldi, 2000, p. 3-4). Minera Yanacocha, which remained the largest gold producer in the country, produced 51.5 t of gold, a 25% increase compared with that of 1998; this represented 40.1% of Peru's gold production in 1999. Gold recovered as a byproduct from the concentrates of the nation's polymetallic mines amounted to 4.2 t. Other private gold producers in 1999 were Minera Barrick Misquichilca S.A. (25.8 t), Cía. Minera Sipán S.A. (6.6 t), Minera Aurífera Retamas S.A. (5.2 t), Cía. Minera Ares S.A. (4.9 t), Consorcio Minero Horizonte S.A. (3.2 t), Cía. Minera Aurífera Santa Rosa S.A. (2.4 t), and Cía. Minera Poderosa S.A. (2.1 t). Medium- and small-sized mines reported 4.3 t, and an unknown number of placers and "garimpos" (informal individual miners) accounted for about 18.3 t. Placers accounted for 18 t, or 14%, of the gold produced in the country. The southeastern Andes have well-known gold placers on the Inambari River and its tributaries. Placer gold production was concentrated in the Inca and the Mariategui Regions, although gold was recovered from placers in rivers and streams throughout the jungle (Ministerio de Energía y Minas, 1999b, p. 25; 2000, p. 23; Sociedad Nacional de Minería, Petróleo y Energía, 1999 p. 64; Soldi, 2000, p. 4).

In 1999, Shougang Hierro Perú S.A., which was a subsidiary of China's Shougang Corp., was Peru's only iron ore producer; its mine output decreased to 3.9 Mt from 4.9 Mt in 1998. The value of iron ore exports decreased by about 30.8% to \$66.7 million (Ministerio de Energía y Minas, 2000, p. 24; Soldi, 2000, p. 3). With an investment of \$100 million, Shougang Hierro will build a new pellet plant to increase production by 3 Mt/yr in 2001. From 1993 to 1998, the company invested \$120 million (Ministerio de Energía y Minas, 1999c, p. 31-32; G.P. Touzett, Director General de Hidrocarburos, Ministerio de Energía y Minas, Peru, written commun., August 23, 1999).

Acerco S.A., which was the new owner of Empresa Siderúrgica del Perú's steel plant, continued with an investment program to upgrade and modernize Peru's largest steelworks; Acerco was owned by G.S. Industries Inc. of the United States, Stanton Funding Co. of Canada, and Wiese Inversiones Financieras S.A. of Peru. Acerco paid \$20.2 million in cash and will pay \$142.7 million to be paid during a period of 8 years and an additional \$30 million investment commitment to upgrade the steelworks (Ministerio de Energía y Minas, 1999c, p. 49).

In 1999, the Peruvian zinc industry produced 899,524 t of zinc in concentrates, which was the world's fourth largest after Australia, Canada, and China. This represented about 12% of the world's concentrate output and 54% of Latin America's zinc concentrate and 28% of refined zinc. Also, Peru produced 271,782 t of lead in concentrates and was the fourth largest producer in the world after Australia, China, and the United States. Exports of lead (222,100 t) and zinc (669,200 t), with silver content, were valued at about \$177.1 million and \$462.4 million, respectively. Until the transfer of its Paragsha unit to the private sector in late 1999, Centromin, which was the country's largest lead producer, reported an output of 49,633 t of refined lead and 150,329 t of zinc metal (Ministerio de Energía y Minas, 1999b, p. 25; 2000, p. 24; Soldi, 2000, p. 3).

In 1999, Cía. Minera Volcán S.A. produced 34,608 t of lead, 166,272 t of zinc, and 149.3 t of silver from its operations in the Yauli mining district and the recently acquired Paragsha property in Cerro de Pasco. Volcán was the largest private zinc producer in Peru. Glencore International's Empresa Minera Iscaycruz S.A. was Peru's second largest private zinc producer with 95,310 t. Cía. Minera Milpo S.A., which was owned by local shareholders (73.8%) and foreign investors (26.2%), produced 22,749 t of lead, 68,235 t of zinc, and 96 t of silver. Cía. Minera Atacocha S.A., which was the second largest private lead producer in Peru, produced 29,482 t of lead, 48,444 t of zinc, and 98.4 t of silver. Cía. Minera San Ignacio de Morococha S.A. produced 8,714 t of lead and 64,795 t of zinc.

Cía. Minera Santa Luisa S.A., which was a subsidiary of Mitsui Mining Co. of Japan, produced 45,393 t of zinc, 22,481 t of lead, and 57 t of silver from its Huanzalá Mine. Cía. Minera Raura S.A. produced about 34,610 t of zinc, 10,092 t of lead, and 61 t of silver. Perubar S.A., which was a subsidiary of Glencore, produced 25,701 t of zinc. Cía. de Minas Buenaventura S.A. was the largest producer of silver with 309 t; it also produced 9,447 t of lead and 8,759 t of zinc. Cía. de Minas Arcata remained the second largest private silver producer with 192 t. Sociedad Minera Corona S.A. became the third largest silver producer with 160.8 t. SPCC reported 114.4

t of silver from its smelting and refining operations in Ilo. Corp. Minera Nor Perú S.A., which was a subsidiary of Pan American Silver Corp. of Canada, produced 24,346 t of zinc, 7,686 t of lead, and 103 t of silver from its underground Quiruvilca Mine in northern Peru (Ministerio de Energía y Minas, 1999b, p. 21-23; Soldi, 2000, p. 3).

Silver production increased to 2,231 t from 2,025 t in 1998. Peru was the world's second largest producer after Mexico. This was mainly because the large- and medium-sized mining companies contributed with 21.3% and 6%, respectively of the total silver output in 1999 (Ministerio de Energía y Minas, 1999b, p. 21).

Minsur S.A. continued as Peru's only tin producer in 1999. Production from its San Rafael Mine in the Mariátegui Region was 30,404 t of tin, which was an 18.1% increase compared with that of 1998. Peru was the largest tin producer in Latin America followed by Brazil and Bolivia and the third largest tin producer in the world after China and Indonesia. Minsur's tin smelting and refining operations in Pisco, south of Lima, produced 16,961 t of metal (Soldi, 2000, p. 4).

Other industrial and fuel minerals to be produced in Peru are discussed in the sequence of their potential value to the local economies. According to International Cement Review, Peru's total cement production in 1999 was 3.8 Mt, which was down 12.5% compared with that of 1998. Five main cement companies operated and produced 3.4 Mt. Cementos Lima S.A. (CLSA), which was the largest, produced about 1.9 Mt of cement, or about 50% of Peru's total cement output; CLSA's Atocongo plant had a design capacity of almost 1 Mt/yr and drew from nearby limestone quarries. Cementos Norte Pacasmayo S.A., which was the second largest, accounted for 12.6% of total production; had an installed capacity of 800,000 t/yr, with a plant utilization of 60%. Cementos Andino S.A., east of Lima, the third largest, accounted for 18% of total production. Cementos Yura S.A. had a market share of about 14%, and Cementos Sur S.A. had 5%; both companies were in Arequipa (International Cement Review, 2000, p. 10).

The state-owned Minero Peru S.A.'s phosphate deposits of Bayóvar Project, which comprised 150,000 hectares of phosphate and brine, have proven reserves of 550 Mt of phosphatic rock; the project has been scheduled for privatization in 2002. A Bayóvar Project, as consumer of sulfuric acid and producer of fertilizer, could be developed competitively because it is located in a valley of great agricultural potential and tremendous export opportunities to the Asia-Pacific region via the port of Paita (Ministerio de Energía y Minas, 1999b, p. 51).

The 90,000-t/yr phosphate plant that was operated by Empresa Minera Regional Grau Bayóvar, S.A., produced only 9,098 t of phosphate in 1999. Phosphate shipments continued to New Zealand under a 100,000-t contract signed with Norphos International Ltd. of Auckland. Other shipments went to Chile and Costa Rica through Paita.

The country's energy mix by source was fossil fuel (24.5%), hydropower (74.8%), and others (0.7%). Peru's largest coal deposits are at Alto Chicama, 140 kilometers (km) north of Trujillo in La Libertad Region. Other coal deposits occur in the Cuenca del Santa in the Marañón Region and the coal basins of Goyllarisquiza and Hatun Huasi in the Caceres Region of

central Peru.

Natural gas was primarily transported by pipeline from the Talara Basin in the Grau Region to the Talara refinery on the coast. Two gasfields were candidates for development in the Ucayali Basin. Peru's proven natural gas reserves were estimated to be 200 Gm³ at the end of 1999. The Aguaytia gasfield, approximately 41 km west-northwest of Pucallpa, had proven reserves of 8.5 Gm³ of gas and 9 million barrels (Mbbbl) of condensate [natural gas liquids (NGL)]. The country's largest potential gasfield is Camisea in Cusco, which consists of a pair of crescent-shaped gasfields with enough gas to supply Arequipa, Cusco, Lima, and other cities with energy for the next 100 years, and is potentially rich enough to supply fuel to neighboring Brazil (Ministerio de Energía y Minas, 1999b, p. 51; Ortigas, 2000, p. 13). The Cachiriari and the San Martin prospects at Camisea had estimated inferred reserves of about 368 Gm³ of gas and 725 Mbbbl of NGL (Sociedad Nacional de Minería, Petróleo y Energía, 1999c, p. 68-69; Ortigas, 2000, p. 7-10). Because the fields are distant from potentially accessible markets, the MEM indicated that new infrastructure was needed and must be developed.

After the Shell/Mobil consortium decided not to proceed with the development of the Camisea gasfield, the Peruvian Government invited other companies to submit proposals. By the end of the year, some of the groups interested in Camisea were Total Elf of France, Pluspetrol of Argentina, Hunt Oil of the United States, and SK Corp. of the Republic of Korea. The Government announced a new call for bids for the first quarter of 2000 (Soldi, 2000, p. 5).

Crude oil production decreased by 8.4%, or averaged 106,000 barrels per day (bbl/d) compared with that in 1998. Petroleum derivatives production in Peru averaged 154,496 bbl/d compared with the 1998 output of 169,647 bbl/d (Ministerio de Energía y Minas, 2000, p. 11; Soldi, 2000, p. 4). Peru imported crude oil and petroleum products to satisfy its internal demand. The value of petroleum and derivative imports was \$591.2 million, which created a trade deficit of \$352.6 million in the energy sector for 1999 (Ministerio de Energía y Minas, 2000, p. 16; Soldi, 2000, p. 4).

Peru's total crude oil production of 38.7 Mbbbl in 1999 came from Occidental Petroleum Corp. del Perú of the United States (38%), which remained as the largest oil producer of the country; the balance was produced by Petroperu (35%) and others (27%). About 65% of the country's crude oil production came from the jungle blocks in the Ucayali Region; the remaining was produced at the coastal and offshore fields in northern Peru. The country's petroleum reserves were estimated to be about 380 Mbbbl in 1999. La Pampilla in Lima, which was the largest oil refinery in Peru, had a capacity of about 102,000 bbl/d. Talara, which was the second largest oil refinery in the country, had a capacity of about 60,000 bbl/d (Ministerio de Energía y Minas, 2000, p. 11).

Peru had 1,988 km of railroads and 72,900 km of roads, of which 8,700 km were paved and 64,200 km were unpaved. There were 8,600 km of navigable waterways and tributaries to the Amazon River system and 208 km of waterways into Lake Titicaca. Peru had an installed electrical generating capacity of 5,042 megawatts (MW), 60% of which came from hydroelectric plants. The Peruvian Government has raised \$694 million from

the privatization of its electrical sector, with a commitment to invest \$1.6 billion to install an additional 1,006 MW of capacity in the immediate future (Ministerio de Energía y Minas, 1999c, p. 71; Central Intelligence Agency, 2000).

Important mineral industry ports included Callao, Ilo, Matarani, Paita, San Nicolás, and Talara on the Pacific Ocean and Iquitos on the Amazon River. Also, a petroleum depot at Bayóvar serviced the 800-km northern Peru crude oil pipeline. Natural gas and liquid gas were transported through a 64-km pipeline in the same area (U.S. Central Intelligence Agency, 2000).

With continued capital flow from domestic and foreign investors, the country's economy was expected to bring long-term benefits to the energy, mining, and related mineral industries, which remained the most interesting sectors of the Peruvian economy. The privatization of Centromin (Cerro de Pasco Unit), Electroperu, Minero Perú, and Petroperu was expected to continue improving prospects for the mining sector, the oil and gas industries, and the electricity generation industry.

According to CEPRI's, the privatization process is expected to continue to generate investments in every sector of the Peruvian economy, particularly in the mining and energy industries. Current investments are being used to modernize Peru's industrial infrastructure. Medium-term foreign investments in the minerals sector were projected to be about \$20 billion, which was the largest committed capital to date, and will contribute significantly to the future of Peru's economic development (Ministerio de Energía y Minas, 1999c, p. 30).

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Major Sources of Information

Dirección General de Minería

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Major Publications

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TABLE 1
PERU: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity	1995	1996	1997	1998	1999
METALS					
Antimony:					
Mine output, Sb content e/	460	460	460	460	460
Metal	230	305	242	364	255
Arsenic, white 3/	4,616	4,969	837	624	1,611
Bismuth:					
Mine output, Bi content e/	900 4/	1,000	1,000	1,000	1,000
Metal	581	939	774	832	705
Cadmium:					
Mine output, Cd content	600 e/	500 e/	116	--	--
Metal	560	405	474 r/	535 r/	465
Chromium, mine output, Cr content	499	181	191	-- r/	--
Copper:					
Mine output, Cu content	409,693	485,595 r/	506,498 r/	483,338 r/	536,387
Sulfate, Cu content	3,755	3,655	3,502	2,450	2,554
Metal:					
Blister	83,368	73,907	50,454	46,595 r/	31,463
Refined	261,751	249,890	294,988	309,594 r/	318,914
Electrowon	33,392	88,172	98,080	101,837	114,917
Total	295,143	338,062	393,068	411,431 r/	433,831
Gold: 5/					
Mines kilograms	33,264	42,351 r/	55,020 r/	71,654 r/	110,528
Placers do.	24,480	22,535	22,920	22,560	17,958
Total do.	57,744	64,886 r/	77,940 r/	94,214 r/	128,486
Indium do.	5,069	4,290	3,799	4,231 r/	4,520
Iron and steel:					
Iron ore and concentrate:					
Gross weight thousand tons	6,234	4,364	4,439	4,880 r/	3,886
Fe content do.	3,948	2,916	3,171 r/	3,282 r/	2,715
Metal:					
Pig iron do.	247 r/	273 r/	264 r/	283 r/	250
Sponge iron do.	3 r/	22 r/	104 r/	61 r/	50
Ferroalloys e/	360	360	360	360	360
Steel ingots and castings e/ thousand tons	515	510	510	510	510
Semimanufactures e/	250	250	250	250	250
Lead:					
Mine output, Pb content	237,597	248,929	262,466	257,713	271,782
Metal	89,696	94,324	97,882	109,492 r/	112,276
Manganese, mine output, Mn content e/	200	200	200	200	200
Molybdenum, mine output, Mo content	3,411	3,667 r/	3,835 r/	4,344	5,471
Selenium, metal, refined kilograms	14,520 r/	12,602 r/	12,678	18,006	23,060
Silver:					
Mine output, Ag content	1,929	1,977 r/	2,090	2,025	2,231
Metal, refined	680	717	773	989 r/	1,115
Tellurium, metal kilograms	30,087	25,089	24,754	21,682	16,610
Tin:					
Mine output, Sn content	22,331	27,004	27,952	25,747	30,404
Metal 6/	--	2,370	8,999	14,363	16,961
Tungsten, mine output, W content	728	331 r/	285 r/	76 r/	--
Zinc:					
Mine output, Zn content	692,290	760,353 r/	867,691	868,757	899,524
Metal	158,987	173,139	169,809	174,655 r/	196,978
INDUSTRIAL MINERALS					
Barite	37,476	37,103	63,600	7,506 r/	3,422
Boron materials, crude (borates)	40,581	39,982 r/	46,988	22,002 r/	14,716
Cement, hydraulic thousand tons	3,792 r/	3,848	4,300 r/	4,340 r/	3,799
Chalk e/	101,000	101,000	101,000	101,000	101,000
Clays:					
Bentonite	26,961	18,592	22,285	19,563 r/	19,659
Fire clay	5,886 r/	897 r/	3,990 r/	3,255 r/	10
Kaolin	8,445	14,295	7,875	4,968 r/	1,332
Common clay	431,759 r/	378,050 r/	326,261	360,958	240,889
Diatomite e/	35,100	35,100	35,100	35,100	35,100
Feldspar	9,099	5,918	2,502	3,983 r/	1,594
Gypsum, crude	25,340	65,446	64,863	78,656 r/	75,636

See footnotes at end of table.

TABLE 1--Continued
PERU: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity	1995	1996	1997	1998	1999
INDUSTRIAL MINERALS--Continued					
Lime	4,315,126	4,369,724	4,097,216	5,507,770 r/	4,306,722
Mica e/	100	100	--	--	-- 4/
Nitrogen, N content of ammonia thousand tons	900 e/	977	1,019	949	950
Phosphate rock, crude	88,638	65,436	52,174	46,821	9,098
Salt, all types	125,651	293,308	79,492	808,625 r/	778,048
Stone, sand and gravel:					
Stone: e/					
Dolomite	1,622 4/	645	645	645	645
Flagstone	300,000	300,000	300,000	300,000	300,000
Granite	2,000	2,000	2,000	2,000	2,000
Limestone thousand tons	4,315 4/	4,370 r/	4,097 4/	5,508 r/ 4/	4,307
Marble	14,924 4/	12,542 r/ 4/	10,080 4/	9,716 4/	7,651
Onyx	150	150	150	150	150
Quartz and quartzite (crushed)	40,000	40,000	40,000	40,000	40,000
Shell, marl	4,000	4,000	4,000	4,000	4,000
Slate	22,954 4/	31,164	33,488 4/	35,202 4/	35,200
Travertine	199,944 4/	259,465	261,392 4/	69,248 4/	69,000 e/
Sand and gravel:					
Construction thousand tons					
	1,337 r/	1,570 r/	1,666 r/	1,819 r/	1,744
Silica sand do.					
	54 r/	76	83	96 r/	90
Sulfur, elemental:					
Native e/					
	100	100	100	100	100
Byproduct of metallurgy e/					
	60,000	60,000	60,000	60,000	60,000
Sulfuric acid, gross weight					
	213,539	233,876	408,010	516,514	517,000 e/
Talc and related materials:					
Talc					
	13,818	12,985	5,750	11,165	11,200 e/
Pyrophyllite e/					
	8,000	8,000	8,000	8,000	8,000
Total e/					
	21,800 r/	21,000 r/	13,800 r/	19,200 r/	19,200
MINERAL FUELS AND RELATED MATERIALS					
Coal:					
Anthracite, run-of-mine					
	17,416 r/	20,699 r/	21,694	7,385	1,488
Bituminous, run-of-mine e/					
	45,000	45,000	45,000	45,000	45,000
Total e/					
	62,400 r/	65,700 r/	66,700 r/	52,400 r/	46,500
Coke, all types e/					
	32,500	10,000	10,000	10,000	10,000
Gas, natural:					
Gross million cubic meters					
	1,095	1,178	1,055	1,402	1,464
Marketed thousand cubic meters					
	267	248	239	404	404
Natural gas liquids: e/					
Natural gasoline and others 7/ thousand 42-gallon barrels					
	295	295	295	295	295
Butane do.					
	5	5	5	5	5
Total do.					
	300	300	300	300	300
Petroleum:					
Crude do.					
	44,443	43,909	42,191	59,625	38,663
Refinery products:					
Liquefied petroleum gas do.					
	3,107	3,191	2,329	2,292	2,357
Gasoline, motor do.					
	9,994	10,561	9,641	10,134	9,449
Jet fuel do.					
	3,155	4,348	2,862	3,416	3,112
Kerosene do.					
	5,092	5,103	5,200	5,103	4,910
Distillate fuel oil do.					
	10,410	11,887	15,092	15,040	13,622
Lubricants do.					
	65	243	567	525	530
Residual fuel oil do.					
	19,199	19,592	18,959	20,640	17,437
Asphalt do.					
	1,557	761	1,206	987	363
Other 8/ do.					
	1,570	1,303	1,720	3,784	4,611
Total do.					
	54,149	56,989	57,576	61,921	56,391

e/ Estimated. r/ Revised. -- Zero.

1/ Table includes data available through October 2000.

2/ Data are rounded to no more than three significant digits; may not add to totals shown.

3/ Output reported by Doe Run Resources Corp.

4/ Reported figure.

5/ Peru's placer gold production was reported.

6/ Output reported by Minsur S.A.'s smelter.

7/ Includes hexane.

8/ Includes refinery fuel and losses.

TABLE 2
PERU: STRUCTURE OF THE MINERAL INDUSTRY IN 1999

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Antimony	Doe Run Resources Corp. (private, 100%)	Smelter at La Oroya, Junín Department	700 1/
Barite	Barmine S.A. (private, 100%)	Santa Cruz de Cocachacra, Huarochirí, Lima Department	NA
Bentonite	Minerales Andinos S.A. (NL Industries, 90%)	Vichayal Mine, Piura Department	9
Bismuth	Doe Run Resources Corp. (private, 100%)	Refinery at La Oroya	1,000 1/
Cement	Cementos Lima S.A. (private, 100%)	Atocongo Plant, Lima Department	1,000
Do.	Cementos Norte Pacasmayo S.A. (private, 100%)	Pacasmayo Plant, La Libertad Department	800
Do.	Cementos Andino S.A. (private, 100%)	East Lima Plant, Lima Department	500
Do.	Cementos Yura S.A. (private, 100%)	Yura Plant, Arequipa Department	300
Do.	Cementos Sur S.A. (private, 100%)	Arequipa Plant, Arequipa Department	200
Copper	Southern Peru Limited (ASARCO Incorporated, 63.0%; Phelps Dodge Overseas Capital Corp., 16.3%; the Marmon Group Inc., 20.7%)	Cuajone, Moquegua Department, and Toquepala, Tacna Department	300
Do.	Doe Run Resources Corp. (private, 100%)	Smelter at Ilo, Moquegua Department	250
Do.	Doe Run Resources Corp. (private, 100%)	Refinery at Ilo, Moquegua Department	175
Do.	Doe Run Resources Corp. (private, 100%)	Cobriza, Huancavelica Department	60
Do.	Doe Run Resources Corp. (private, 100%)	Smelter at La Oroya	65
Do.	Doe Run Resources Corp. (private, 100%)	Refinery at La Oroya	60
Do.	Glencore International (private, 100%)	Casapalca, Lima Department	60
Do.	Cía. Minera Volcán S.A. (private, 100%)	San Cristóbal, Mahr Túnel, and Andaychagua, Junín Department	60
Do.	Cía. Minera San Ignacio de Morococha S.A. (private, 100%)	Yauricocha, Junín Department	60
Do.	BHP Tintaya S.A. (private, 100%)	Tintaya Mine, Cusco Department	50
Do.	Sociedad Minera Cerro Verde S.A. (Cyprus-Amax Minerals Co., 90.9%; Cía. de Minas Buenaventura S.A. 9.1%)	Cerro Verde, Arequipa Department	30
Do.	Sociedad Minera Cerro Verde S.A. (Cyprus-Amax Minerals Co., 90.9%; Cía. de Minas Buenaventura S.A. 9.1%)	Electrowon at Cerro Verde	20
Dolomite	Minera Baribent S.A. (private, 100%)	Esperanza, Ancash Department	25
Gold	Minera Yanacocha S.A. (Newmont Mining Corp., 51.4%; Cía. de Minas Buenaventura S.A., 43.6%; World Bank's International Finance Corporation, 5%)	Yanacocha and Magui-Magui mines, Cajamarca Department	50,000 2/
Do.	Minera Barrick Misquichilca S.A. (Barrick Gold Corp., private, 100%)	Pierina, Cajamarca Department	26,000 2/
Do.	Cía. Minera Poderosa S.A. (private, 100%)	Poderosa, La Libertad Department	1,300 2/
Do.	Cía. de Minas Orcopampa S.A. (Buenaventura, 100%)	Orcopampa, Arequipa Department	1,050 2/
Do.	Asesoría Contable Minera S.A. (private, 100%)	Ocoña, Santa Clarita, Explorato, and Molino de Oro, Arequipa Department	1,000 2/
Do.	Cía. Aurífera Río Inambari S.A. (Cía. Minera del Sur S.A., 84%, Aurífera Claudia, 16%)	Río Caichive, Madre de Dios Department	200 2/
Do.	Minera Aurífera Retamas S.A. (private, 100%)	Retamas, La Libertad Department	3,900 2/
Do.	Consortio Minero Horizonte S.A. (private, 100%)	Parcoy, La Libertad Department	2,100 2/
Do.	Cía. Minera Sipán S.A. (private, 100%)	Sipán, Inca, La Libertad Department	3,900 2/
Iron ore	Shougang Hierro Perú S.A. (Shougang Corp., 100%)	Marcona, Ica Department.	13,000
Lead	Empresa Minera del Centro del Perú S.A. (Centromín) (Government, 100%)	Cerro de Pasco, Cerro de Pasco Department	85
Do.	Doe Run Resources Corp. (private, 100%)	Smelter at La Oroya	93
Do.	Doe Run Resources Corp. (private, 100%)	Refinery at La Oroya	95
Do.	Glencore International (private, 100%)	Casapalca, Lima Department	60
Do.	Cía. Minera Volcán S.A. (private, 100%)	San Cristóbal, Mahr Túnel, and Andaychagua, Junín Department	60
Do.	Cía. Minera San Ignacio de Morococha S.A. (private, 100%)	Yauricocha, Junín Department	60
Do.	Cía. Minera Milpo S.A. (private, 100%)	El Porvenir Mine, Pasco Department	20
Do.	Cía. Minera Santa Luisa S.A. (private, 100%)	Huanzalá Mine, Junín Department	40
Molybdenum	Southern Peru Limited (ASARCO Incorporated, 63.0%; Phelps Dodge Overseas Capital Corp., 16.3%; the Marmon Group Inc., 20.7%)	Cuajone, Moquegua Department, and Toquepala, Tacna Department	NA
Petroleum, crude	Petróleos del Perú S.A. (Petroperu) (Government, 100%)	Onshore Piura Department; northeast and central jungle areas, Loreto Department	68,000 3/
Do.	Petróleos del Mar S.A. (Petroperu, 100%)	Pacific Coast, offshore Piura Department	28,000 3/
Do.	Occidental Petroleum Corp. del Perú (private, 100%)	Northeastern jungle, Loreto Department	90,000 3/
Petroleum products	Petroperu	Refineries at Talara, Lima, Iquitos, Marsella, and Pucallpa	185,500 3/
Silica sand	Minera Baribent S.A. (private, 100%)	María G. and Martín I., Junín Department	27

See footnotes at end of table.

TABLE 2--Continued
PERU: STRUCTURE OF THE MINERAL INDUSTRY IN 1999

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Silver	Centromín	Cerro de Pasco, Cerro de Pasco Department	116,500 2/
Do.	Glencore International (private, 100%)	Casapalca, Lima Department	65,000 2/
Do.	Cía. Minera Volcán S.A. (private, 100%)	San Cristóbal, Mahr Túnel, and Andaychagua, Junín Department	50,000 2/
Do.	Cía. Minera San Ignacio de Morococha S.A. (private, 100%)	Yauricocha, Junín Department	46,500 2/
Do.	Doe Run Resources Corp. (private, 100%)	Refinery at La Oroya	809,000 2/
Do.	Cía. de Minas Buenaventura S.A. (Buenaventura) (private, 83%; Centromin 17%)	Julcani and Huachocolpa Mines Huancavelica Department, Uchucchacua Mine, Lima Department	187,000 2/
Do.	Cía. de Minas Orcopampa S.A. (Buenaventura, 100%)	Orcopampa Mine, Arequipa Department	161,000 2/
Steel	Empresa Siderúrgica del Perú (Acerco S.A., 100%)	Chimbote, Ancash Department	550
Do.	Empresa Laminadora del Pacífico S.A. (private, 100%)	Pisco, Ica Department	180
Tellurium	Doe Run Resources Corp. (private, 100%)	Refinery at La Oroya	12 1/
Tin	Minsur S.A. (private 100%)	San Rafael Mine, Puno Department	2,500 1/
Tungsten	Minera Regina S.A. (private, 100%)	Palca XI, Puno Department	1,400 1/
Do.	Fermin Málaga Santolalla S.A. (private, 100%)	Pasto Bueno, Ancash Department	1,000 1/
Zinc	Cía. Minera Volcán S.A. (private, 100%)	Cerro de Pasco, Cerro de Pasco Department San Cristóbal, Mahr Túnel, and Andaychagua, Junín Department	275
Do.	Empresa Minera Iscaycruz S.A. (Glencore International, 100%)	Iscaycruz, Lima Department Casapalca, Lima Department	90 25
Do.	Cía. Minera San Ignacio de Morococha (private, 100%)	Yauricocha, Junín Department	80
Do.	Doe Run Resources Corp. (private, 100%)	Refinery at La Oroya	70
Do.	Refinería Cajamarquilla S.A. (Cominco Ltd. of Canada, 87%; Marubeni Corp. of Japan, 13%)	Refinery at Cajamarquilla, Lima Department	120
Do.	Cía. Minera San Ignacio de Morococha S.A. (private, 100%)	San Vicente Mine, Junín Department	70
Do.	Cía. Minera Raura S.A. (private, 100%)	Raura, Lima Department	45
Do.	Corp. Minera Nor Perú S.A. (Panamerican Silver Corp., 100%)	Quiruvilca, La Libertad Department	25
Do.	Cía. Minera Santa Luisa S.A. (private, 100%)	Huanzalá Mine, Junín Department	20
Do.	Cía. Minera Milpo S.A. (private, 100%)	Yanacancha, Cerro de Pasco Department.	60

NA Not available.

1/ Metric tons per year.

2/ Kilograms per year.

3/ 42-gallon barrels per day.